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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,789	10/23/2003	Jun-Kook Choi	SNJ-0048	7185
23413	7590	03/07/2007	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			WANG, QUAN ZHEN	
			ART UNIT	PAPER NUMBER
			2613	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/07/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/691,789

Applicant(s)

CHOI ET AL.

Examiner

Quan-Zhen Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oberg et al. (U.S. Patent Application Publication US 2005/0084262 A1) (Oberg 1) in view of Seydnejad et al. (U.S. Patent Application Publication US 2004/0208525 A1).

Regarding claim 1, Oberg 1 discloses a ring type wavelength division multiplexing passive optical network (WDM PON) system (figs. 1-2 and 4-5) using the same wavelength for forward and backward channels, comprising: a central office (figs. 4-5, node A) including general media converters (MCs) each having a transmitter (fig. 4, TET in node A) adapted to convert an electrical signal into an optical signal to be outputted, and a receiver (fig. 4, RET in node A) adapted to receive an optical signal having the same wavelength as the output optical signal, and to convert the received optical signal into an electrical signal to be outputted, and a WDM multiplexer/demultiplexer (MUX/DEMUX) (fig. 5, the combination of MUX 13, DEMUX 14, and circulator or interleaver 7) for multiplexing optical signals of different wavelengths respectively outputted from the general MCs, and externally outputting the resultant multiplexed optical signal, the WDM MUX/DEMUX also demultiplexing a

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multiplexed signal, externally inputted thereto, and outputting the resultant demultiplexed signals to respective general MCs; a coupler (fig. 4, coupler 29) for transmitting the multiplexed signal outputted from the WDM MUX/DEMUX through two different optical communication lines in a distributed manner, while transmitting an optical signal received from any one of the optical communication lines to the WDM MUX/DEMUX; the optical communication lines constructing a ring type distribution network through bi-directional add/drop devices each coupled to the optical communication lines (figs. 2 and 4); and remote nodes including redundancy MCs (fig. 2, Tx and Rx in node C) respectively coupled to the bi-directional add/drop devices, each of the redundancy MCs functioning to detect a line breakage by checking a system error caused by loss of signal (paragraph 0049), and to transmit an optical signal only in a clockwise or counter-clockwise direction in accordance with the result of the detection (paragraphs 0039-0073). Oberg 1 differs from the claimed invention in that Oberg 1 does not specifically disclose to detect a line breakage by checking an erroneous event corresponds to a link error caused by reflection. However, Oberg 1 further discloses a power monitor (for example, fig. 6, power monitor 37) that can be configured to check an erroneous event corresponds to a link error caused by reflection. In addition, it is well known in the art to check an erroneous event corresponds to a link error caused by reflection. For example, Seydnejad discloses to check an erroneous event corresponds to a link error caused by reflection (fig. 9). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a power monitor, such as the power monitor 37, in the system of Oberg 1 to check an

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erroneous event corresponds to a link error caused by reflection, as it is taught by Seydnejad, in order to locate a fiber cut (paragraph 0046).

Regarding claim 2, Oberg further discloses that the system comprises at least one of the remote nodes further includes a 3-port add/drop device coupled to the optical communication lines constructing the ring type distribution network (fig. 9b, node C).

3. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oberg et al. (U.S. Patent Application Publication US 2005/0084262 A1) (Oberg 1) in view of Seydnejad et al. (U.S. Patent Application Publication US 2004/0208525 A1) and further in view of Oberg et al. (U.S. Patent Application Publication US 2003/0128984 A1) (Oberg 2).

Regarding claims 3 and 9, Oberg 1 further discloses each of the bidirectional add/drop devices comprises first and second WDM filters (figs. 2 and 4, add/drop filters 27) having opposite signal travel directions between the optical communication lines, the first WDM filter dropping a particular wavelength one of optical signals, received from a first one of the optical communication lines, to a master channel of the redundancy MC (fig. 2, the Tx and RX on left hand side in node C) coupled to the bi-directional add/drop device, while receiving an optical signal having the same wavelength as the dropped optical signal, and reflecting the received optical signal to the first optical communication line, and the second WDM filter dropping the particular wavelength one of optical signals, received from a second one of the optical communication lines, to a slave channel of the redundancy MC (fig. 2, the Tx and RX on

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right hand side in node C), while receiving an optical signal having the same wavelength as the dropped optical signal, and reflecting the received optical signal to the second optical communication line (paragraphs 0039-0073). The modified system of Oberg 1 and Seydnejad differs from the claimed invention in that Oberg 1 and Seydnejad do not specifically disclose that the WDM filters are thin film WDM filters. However, it is well known in the art to use thin film filters for add/drop WDM filters. For example, Oberg 2 discloses using thin film filters for add/drop WDM filters (fig. 6a, paragraph 0040). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to use thin film filters for the add/drop WDM filters, as it is disclosed by Oberg 2, in the modified system of Oberg 1 and Seydnejad in order to add/drop optical singles.

4. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oberg et al. (U.S. Patent Application Publication US 2005/0084262 A1) (Oberg 1) in view of Seydnejad et al. (U.S. Patent Application Publication US 2004/0208525 A1) and Oberg et al. (U.S. Patent Application Publication US 2003/0128984 A1) (Oberg 2) and further in view of Weissmann et al. (U.S. Patent US 5,333,130).

Regarding claims 4-6, Oberg 1, Seydnejad, and Oberg 2 have been discussed above in regard with claims 1-3 and 9. Oberg 1 further discloses a master transmitting/receiving unit (fig. 2, the Tx and RX on left hand side in node C) and a slave master transmitting/receiving unit (fig. 2, the Tx and RX on right hand side in node C). The system inherently includes interfaces respectively connected to the master and

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slave transmitting/receiving units, each of the interfaces performing a data interfacing operation between an associated one of the master and slave transmitting/receiving units and the optical network unit. The modified system of Oberg 1, Seydnejad, and Oberg 2 differs from the claimed invention in that Oberg 1 and Oberg 2 do not specifically disclose a control unit for detecting respective states of the master and slave transmitting/receiving units and a fiber breakage status, thereby activating a selected one of the master and slave transmitting/receiving units to perform transmitting and receiving operations. However, it is well known in the art to include a control unit for detecting respective states of the master and slave transmitting/receiving units and a fiber breakage status, thereby activating a selected one of the master and slave transmitting/receiving units to perform transmitting and receiving operations. For example, Weissmann discloses a control unit (fig. 4, combination of elements 20, 30, 40, and 90, column 9, lines 10-29) for detecting respective states of the master and slave transmitting/receiving units and a fiber breakage status, thereby activating a selected one of the master and slave transmitting/receiving units to perform transmitting and receiving operations. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a control unit, as it is disclosed by Weissmann, in the modified system of Oberg 1, Seydnejad, and Oberg 2, in order to ensure communications between nodes in the system.

Regarding claim 8, Weissmann further discloses that the control unit disables a transmitter included in the transmitting/receiving unit associated with the currently-activated channel, and detects whether or not a receiver included in the associated

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transmitting/receiving unit can be switched to a link-on state, thereby determining whether or not a fiber breakage status occurs (figs. 4-7).

5. Claims 7 and 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oberg et al. (U.S. Patent Application Publication US 2005/0084262 A1) (Oberg 1) in view of Seydnejad et al. (U.S. Patent Application Publication US 2004/0208525 A1), Oberg et al. (U.S. Patent Application Publication US 2003/0128984 A1) (Oberg 2) and Weissmann et al. (U.S. Patent US 5,333,130) and further in view of Kowalczyk et al. (U.S. Patent US 5,87,957).

Regarding claim 7, the modified system of Oberg 1, Seydnejad, Oberg 2, and Weissmann differs from the claimed invention in that Oberg 1, Seydnejad, Oberg 2, and Weissmann do not specifically disclose a buffer arranged at a rear end of the interface connected to the slave transmitting/receiving unit, and adapted to perform a data buffering operation. However, it is well known in the art to include a buffer in a slave transmitting/receiving unit. For example, Kowalczyk discloses a buffer arranged in a slave transmitting/receiving unit, and adapted to perform a data buffering operation (fig. 3, column 3, line 36 to column 4, line 5). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a buffer in the slave transmitting/receiving unit and adapted to perform a data buffering operation, as it is disclosed by Kowalczyk, in the modified system of Oberg 1, Seydnejad, Oberg 2, and Weissmann in order to prevent data loss in the communication system.

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Regarding claim 10, Weissmann further discloses that the control unit disables a transmitter included in the transmitting/receiving unit associated with the currently-activated channel, and detects whether or not a receiver included in the associated transmitting/receiving unit can be switched to a link-on state, thereby determining whether or not a fiber breakage status occurs (figs. 4-7).

Response to Arguments

6. Applicant's arguments filed on January 24, 2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

qzw
2/23/2007


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